Panasonic

TX–28LD90F

TX–25LD90F

Colour Television

Quintrix

100Hz SUPER DIGITAL SCAN

DIGITAL 8-BIT Technology

Q Link

Operating Instructions

TQB8E2654U

WELCOME

Dear Panasonic Customer,
Welcome to the Panasonic family of customers. We hope that you have many years of enjoyment from your new colour television. This is a very advanced television; however, the Quick Start Guide will allow you to use the TV as quickly as possible. You can then read the instructions completely and retain them for future reference.

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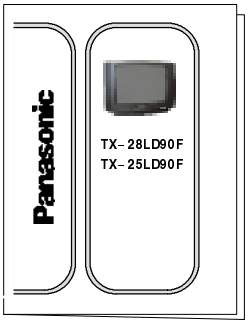
WARNINGS AND PRECAUTIONS

- This TV set is designed to operate on A.C. 220 – 240V, 50Hz.
- To prevent damage which might result in electric shock or fire, do not expose this TV set to rain or excessive moisture.
- **WARNING : HIGH VOLTAGE !!!**
  Do not remove the rear cover as live parts are accessible when it is removed. There are no user serviceable parts inside.
- Avoid exposing the TV set to direct sunlight and other sources of heat.
- The On/Off switch on this model does not fully disconnect the TV from the mains supply. Remove the mains plug from the wall socket when the TV set is not used for a prolonged period of time.
- **CABINET AND PICTURE TUBE CARE**
  Remove the mains plug from the wall socket. The cabinet and picture tube can be cleaned with a soft cloth moistened with mild detergent and water. Do not use solutions containing benzol or petroleum. TV sets can produce static electricity, care must be taken whenever touching the TV screen.
- Adequate ventilation is essential to prevent failure of electrical components, we recommend that a gap of at least 5cm is left all around this television receiver even when it is placed inside a cabinet or between shelves.

ACCESSORIES

Check that you have the accessories and items shown ✓

☐ Operating Instruction book
TQB8E2654

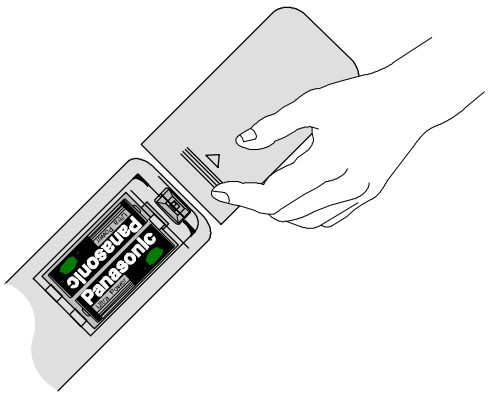


☐
TV Guarantee

☐ Remote Control Transmitter
EUR511211

☐ Batteries for the Remote Control Transmitter.
(2 x R6 (UM3) size)

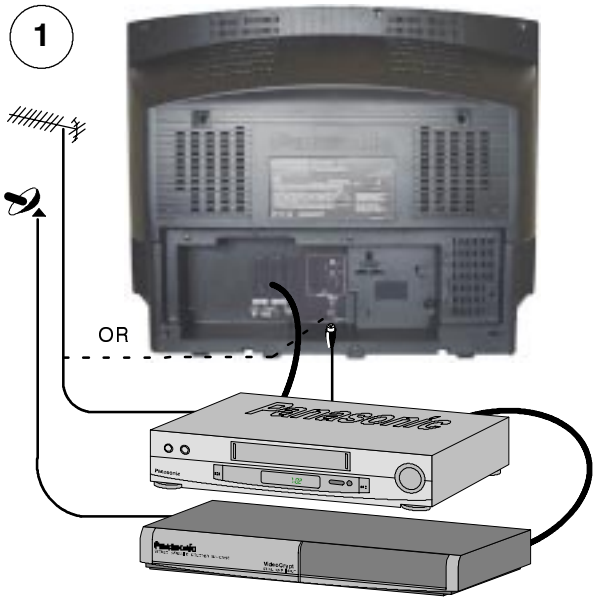
Remote control batteries



- Make sure that the batteries are fitted the correct way round.
- Do not mix old batteries with new batteries. Remove old, exhausted batteries immediately.
- Do not mix different battery types, i.e. Alkaline and Manganese or use rechargeable (Ni–Cad) batteries.

Quick Start Guide

1



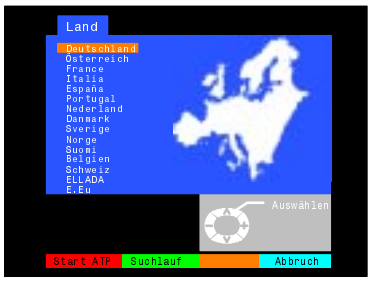
Plug in aerial and connect ancillary equipment

2

First, ensure that the **VCR is in Standby mode**

Plug in T.V. and switch on

3

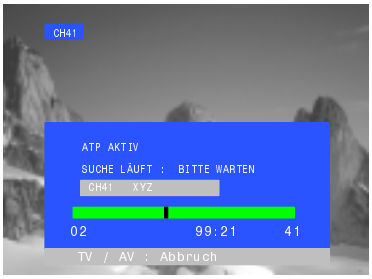


Select your country

For Switzerland and Belgium, select the desired language

Press the red button

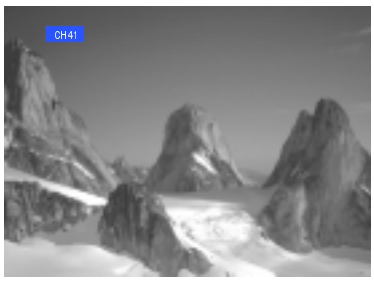
4

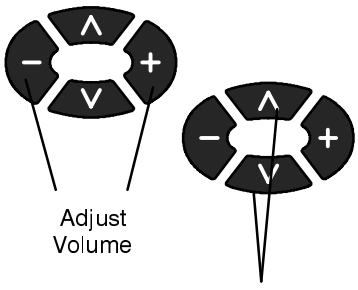


Auto setup will begin, your stations will be located and stored.

If a compatible VCR is connected to the AV2 socket, programme data will be downloaded to the VCR via Q – Link. See page 21.

5





Adjust Volume

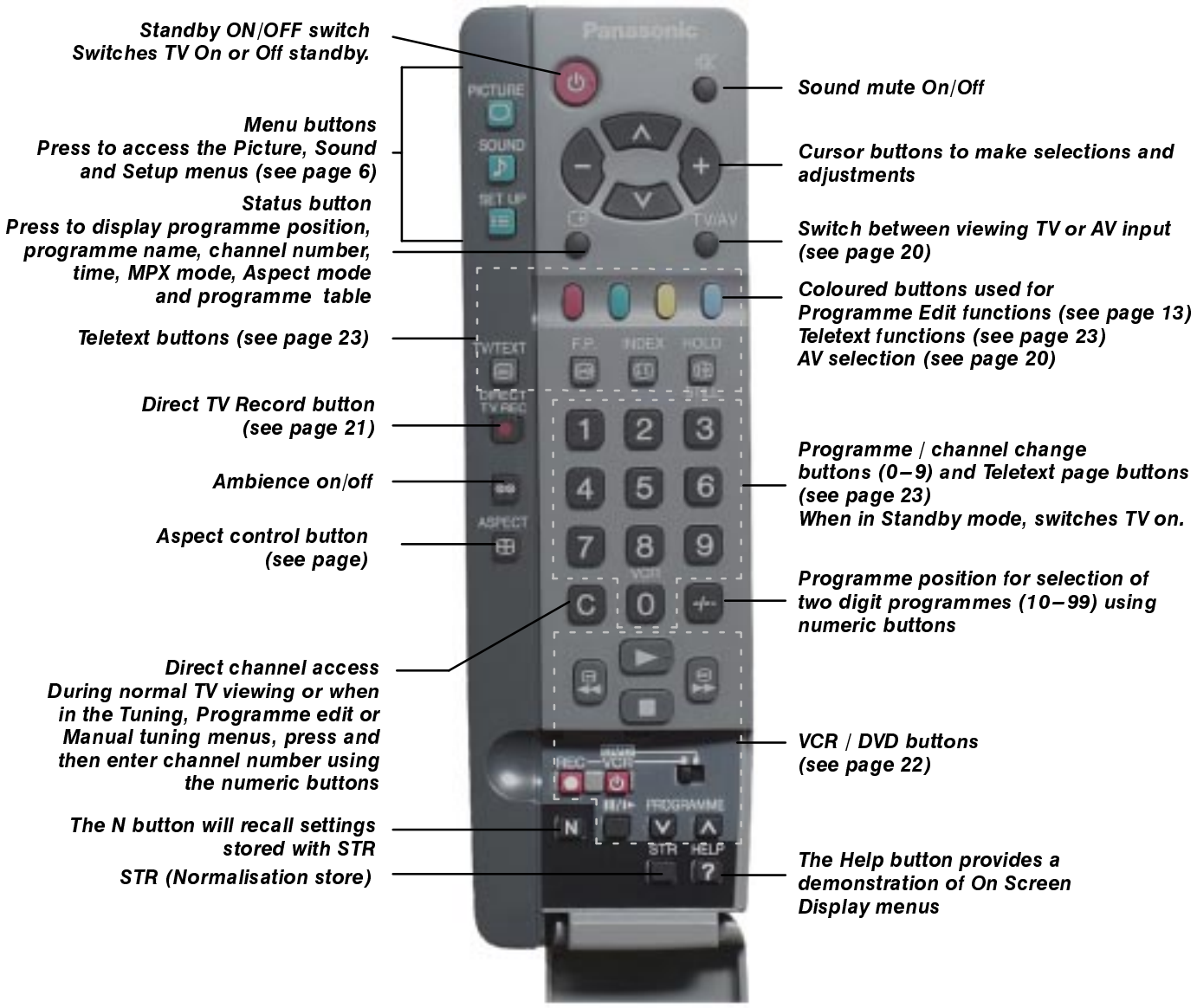
Change Channel

If you are installing a new Q – Link compatible VCR, you can now switch it ON. Downloaded tuning data will match the television's.
If you are installing a new NEXTVIEWLINK compatible VCR, you will need to initiate download manually.
See the VCR handbook for details.

- If the VCR has not accepted download data from the TV, you may need to select the Download option from the VCR's menu.
- If Q – Link is not operating correctly, check it is connected to the television's AV2 socket, the SCART lead is a "full function" type, and the VCR is compatible with Q – Link, NEXTVIEWLINK or similar technologies. Ask your dealer for further details.
- For further information on Q – Link and connecting equipment, see pages 21, 25 and 26.

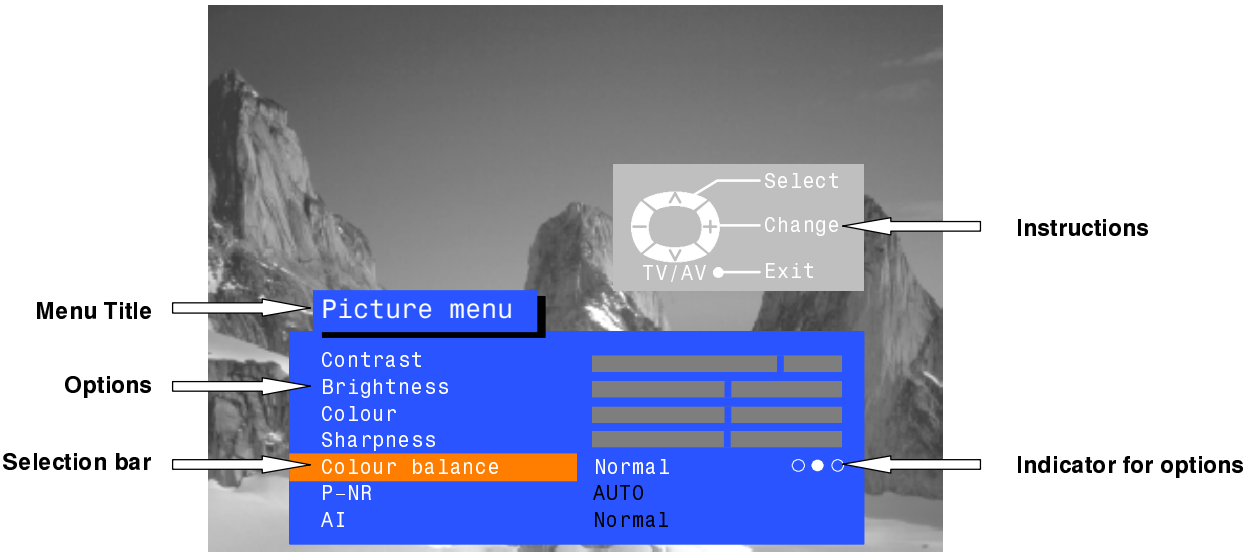
BASIC CONTROLS :
FRONT PANEL AND REMOTE CONTROL

Press here to open flap
MAINS Power On/Off switch
Red light indicates Standby mode.
STR (Normalisation store) Used to store tuning and other function settings
F (Function select) Displays the On Screen Display functions, use repeatedly to select from the available functions – Volume, Contrast, Brightness, Colour, Sharpness, Tint (in NTSC mode), Bass, Treble, Balance and Tuning.
RCA Audio/Video sockets (page 25)
S–VHS socket (see page 25)
Headphone socket (see page 25)
TV/AV switch (see page 20)
Increases or decreases the programme position by one. When a function is already displayed, press to increase or decrease the selected function. When in Standby mode, switches TV On.


Standby ON/OFF switch Switches TV On or Off standby.
Menu buttons Press to access the Picture, Sound and Setup menus (see page 6)
Status button Press to display programme position, programme name, channel number, time, MPX mode, Aspect mode and programme table
Teletext buttons (see page 23)
Direct TV Record button (see page 21)
Ambience on/off
Aspect control button (see page)
Direct channel access During normal TV viewing or when in the Tuning, Programme edit or Manual tuning menus, press and then enter channel number using the numeric buttons
The N button will recall settings stored with STR
STR (Normalisation store)
Sound mute On/Off
Cursor buttons to make selections and adjustments
Switch between viewing TV or AV input (see page 20)
Coloured buttons used for Programme Edit functions (see page 13) Teletext functions (see page 23) AV selection (see page 20)
Programme / channel change buttons (0–9) and Teletext page buttons (see page 23) When in Standby mode, switches TV on.
Programme position for selection of two digit programmes (10–99) using numeric buttons
VCR / DVD buttons (see page 22)
The Help button provides a demonstration of On Screen Display menus
Panasonic
PICTURE
SOUND
SET UP
TV/AV
TV/TEXT
F.P.
INDEX
HOLD
DIRECT TV REC
ASPECT
VCR
REC
PROGRAMME
STR
HELP

USING THE ON SCREEN DISPLAYS

This TV has a comprehensive system of On Screen Display menus to access adjustments and options



Some selections, for example, **Contrast, Brightness, Colour** and **Sharpness** will allow you to increase or decrease their level.

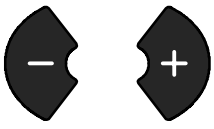
Some selections, for example, **Off timer**, allow a change of setting to be made.

Some selections, for example **Tuning menu**, will lead to a further menu.

The **PICTURE**, **SOUND** and **SET UP** buttons are used to open the main menus and also to return to the previous menu.

The up and down cursor buttons are used to move the cursor up and down the menus.

The left and right cursor buttons are used to access menus, adjust levels or to select from a range of options.



The **STR** button is used to store settings after adjustments have been made or options have been set.

The **TV/AV** button is used to exit the menu system and return to the normal viewing screen.

The **HELP** button will run a demonstration of the menus available. Press the **HELP** button and select one of the options.

ASPECT CONTROLS

Press the ASPECT button to move through the four aspect options: Auto, 4:3, 16:9 and S–Zoom.

ASPECT

Auto

Selecting **AUTO** mode of this TV will automatically cause the TV to display any incoming picture at its correct format, i.e. 16:9 or 4:3.

16:9

4:3

4:3

4:3 will display a 4:3 picture at its standard 4:3 size and can be selected if you wish to view in this format.

ASPECT CONTROLS

16:9

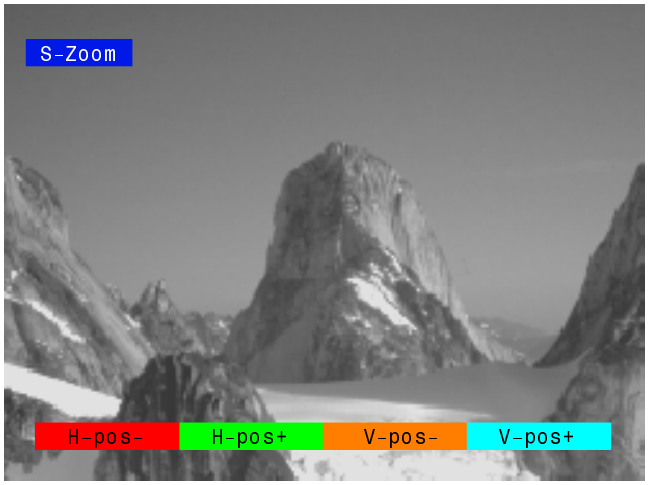
16:9 will display a 16:9 picture at its standard 16:9 size and can be selected if you wish to view in this format

S–Zoom

S–Zoom allows increased magnification and the ability to move the picture horizontally and vertically.

The on screen selector keys that appear for some aspect functions will clear after a few seconds. If you subsequently wish to select an operation then press the Aspect key once more for the keys to reappear.

If, in Auto mode, you experience problems with the screen display size when playing back widescreen format recordings from your VCR then it is possible that the tracking control of your VCR requires adjustment (your VCR instruction book will contain adjustment details).



Increased magnification with **S–Zoom**

STILL CONTROL

STILL Control
The STILL key allows you to freeze the picture at any time.

PICTURE MENU

Open the Picture menu

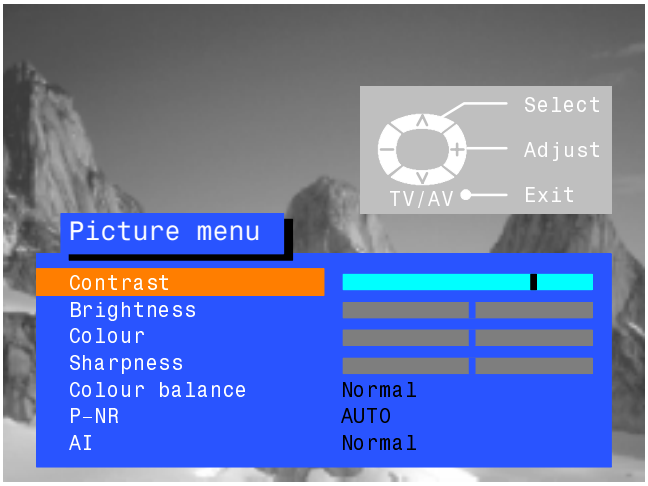
PICTURE

Move to your choice

Increase or decrease levels or set options

Press the TV/AV button to exit the Picture menu

TV/AV



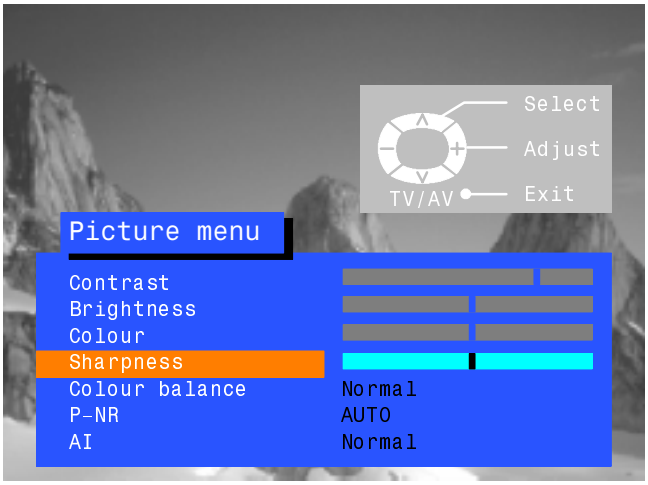
Contrast

Brightness

Colour

Sharpness

The Contrast, Brightness, Colour and Sharpness levels can be adjusted to suit your own preferences.



Tint

The Tint adjustment will only appear as a menu item if you have an NTSC signal source connected to the TV and will allow adjustment of the hue.

Colour balance

○●○

The Colour balance setting allows you to set the overall colour tone of the picture.

P–NR

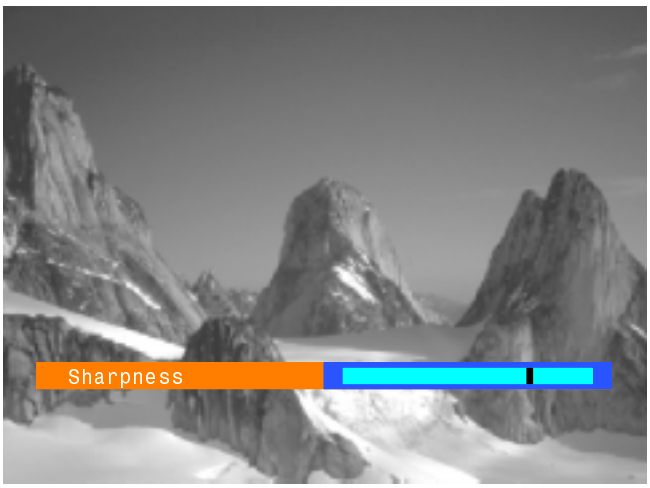
●○○○

P–NR will automatically reduce unwanted picture noise.

AI

○●○

AI automatically analyses the incoming picture and processes it to give improved contrast and optimum depth of field.



SOUND MENU

Open the Sound menu

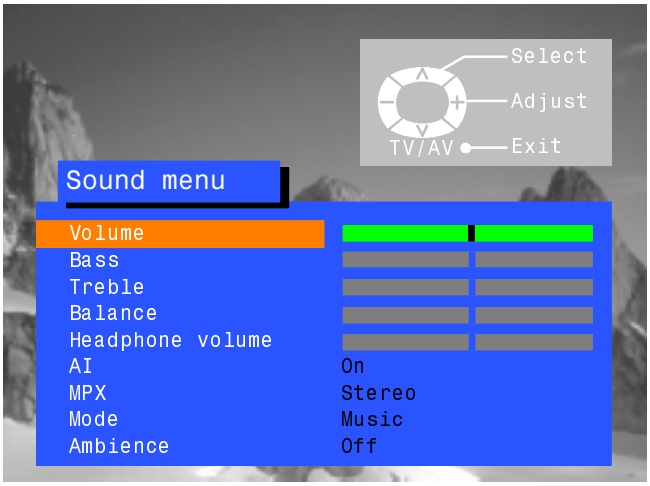
SOUND

Move to your choice

Increase or decrease levels or set options

Press the TV/AV button to exit the Sound menu

TV/AV



Volume

The Volume adjustment sets the overall output volume.

Bass

Bass adjustment will emphasise the lower, deeper frequencies and can be increased or decreased.

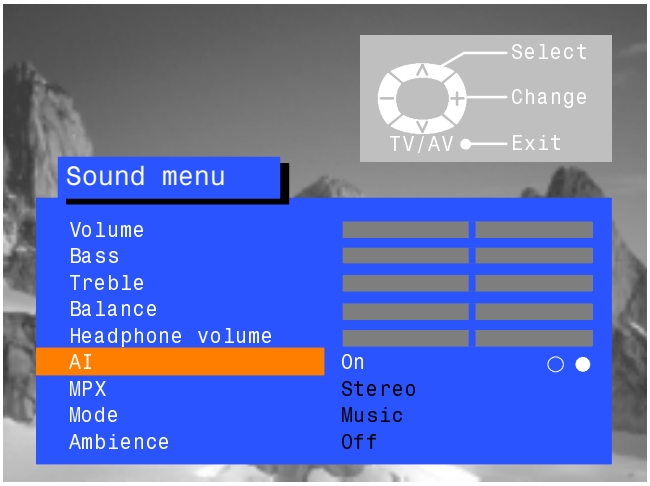
Treble

Treble adjustment will emphasise the sharper, higher frequencies and can be increased or decreased.

Balance

Balance affects the levels of sound between the left and right speakers. Adjustment can be made so that the level from the speakers will suit your listening position.

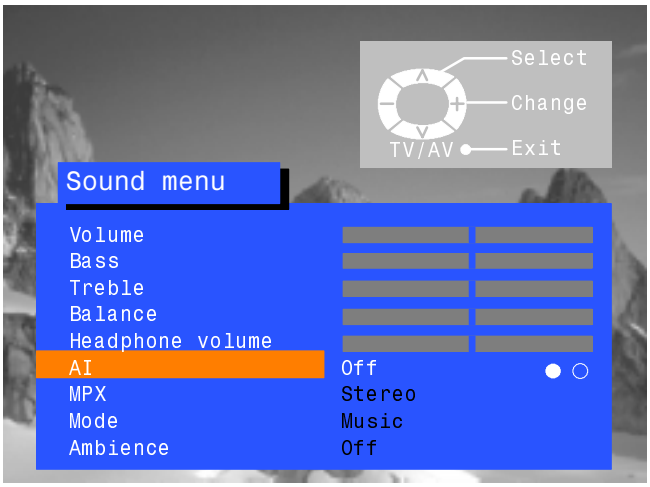
The headphone volume can be adjusted independently of the TV speakers so that everyone can enjoy listening at their own comfort level.



AI

○ ●

The AI setting automatically analyses the incoming sound signal and processes it to give lower noise and optimum tone for the programme material.



MPX

● ○

MPX will usually be set to Stereo to provide the best reproduction, however if reception deteriorates or if the service is not available then it is advisable to switch to Mono. Mono (M1) and (M2) can also be selected if signals are being transmitted.

Mode

● ○

The sound can be improved during Music or Speech mode by selecting the appropriate function.

Ambience

● ○

Ambience provides a dynamic enhancer to simulate improved spatial effects.

SETUP MENU

The Setup menu provides access to various advanced features and also to the Tuning menu

Open the Setup menu

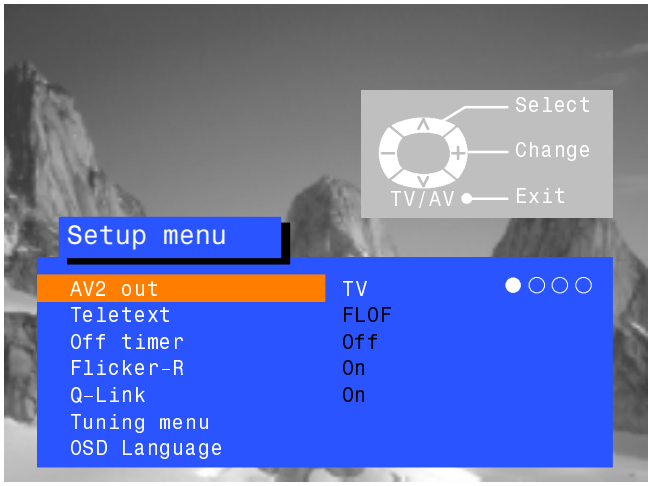
SET UP

Move to your choice

Increase or decrease levels, set options or access further menus

Press the TV/AV button to exit the Setup menu

TV/AV

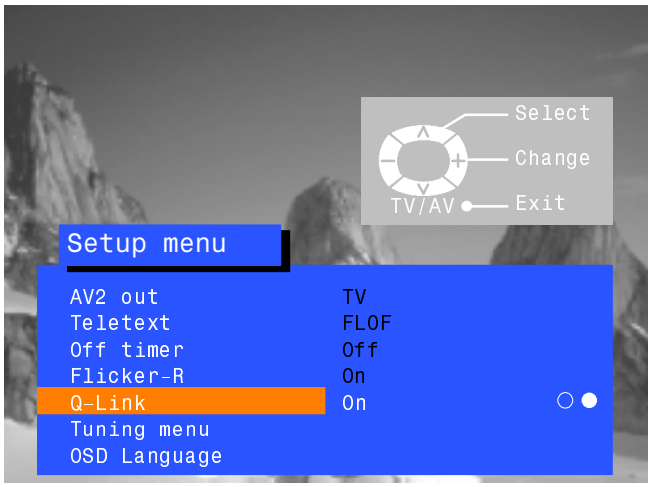


●○○○ **AV2 out**

AV2 offers you a choice of signals to send to the AV2 SCART socket. You can choose from the current **TV** programme position, the signal entering **AV1**/**AV3** or **Monitor** – the picture displayed on screen.

●○ **Teletext**

The Teletext option allows you to choose between FLOF/TOP or LIST mode. See page 23.



●○○○○○○ **Off timer**

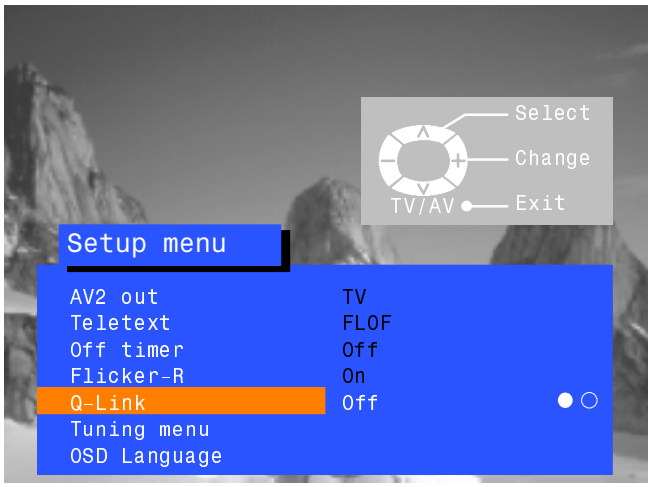
Off timer will switch the TV off within a preset time which you can choose from between 0 to 90 minutes in 15 minute intervals.

●○ **Flicker–R**

You will normally find that Flicker–R is best set to **On** to reduce any slight picture movement. However, it is possible that some occasional broadcasts may benefit by selecting the **Off** position.

○● **Q–Link**

Q–Link allows you to enable or disable data communication when a VCR compatible with Q–Link, NEXTVIEWLINK or similar technology is connected. See page 21.



Tuning menu

The Tuning menu provides an entry to many other features including Programme edit and Auto setup. See page 12.

OSD Language

OSD Language allows you to select the language used for On Screen Displays. See page 19.

TUNING MENU – overview

Open the Setup menu

SET UP

Move to Tuning menu

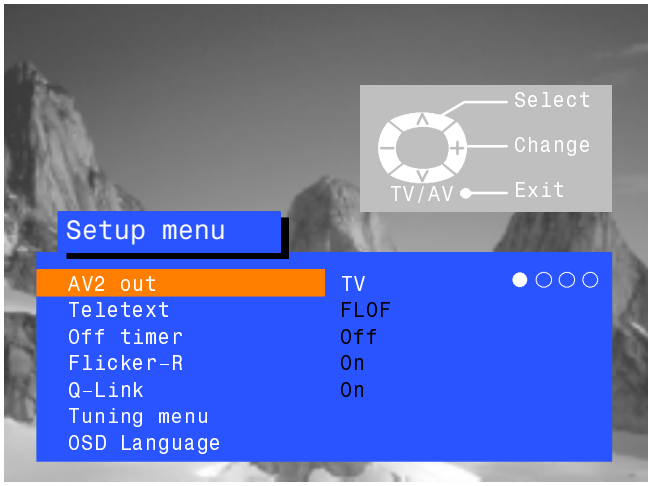
Access Tuning menu

Move to your choice

Increase or decrease levels, set options or access further menus

Press the TV/AV button to exit

TV/AV

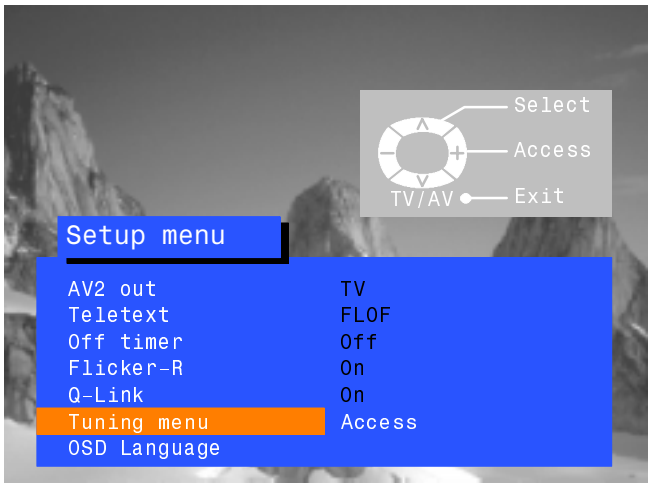


Programme edit

Accessing the Programme edit menu will allow stations to be moved, added, deleted, named or locked.
See page 13.

Auto setup

The Auto setup menu allows you to automatically retune the TV.
See page 17.



Manual tuning

The Manual tuning menu allows individual programme positions to be tuned manually. See page 18.

Fine tuning

Small adjustments to tuning can be made using the Fine tuning function.

Colour system

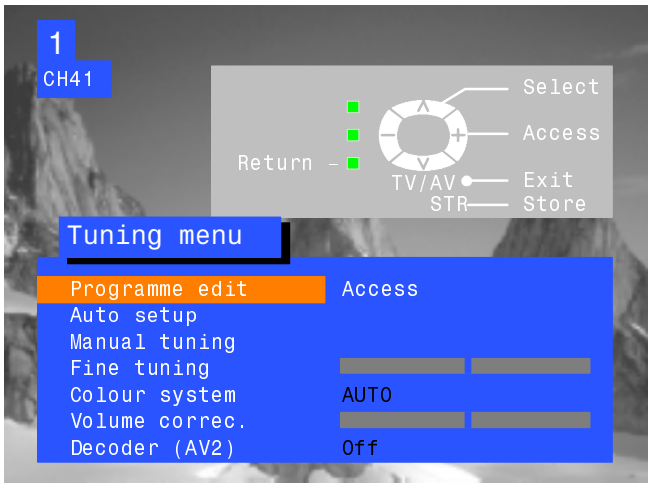
The Colour system menu allows you to decide the correct choice of transmission standard.

Volume correction

Volume correction allows you to adjust the volume level of individual stations.

Decoder (AV2)

This option is used when a decoder is connected via AV2. Set to On if a scrambled signal is to be processed by the decoder. Set to Off after use.



TUNING MENU – PROGRAMME EDIT

The Programme edit menu allows you to edit the programme position settings

Open the Setup menu

SET UP

Move to Tuning menu

Access Tuning menu

Move to Programme edit menu

Access Programme edit menu

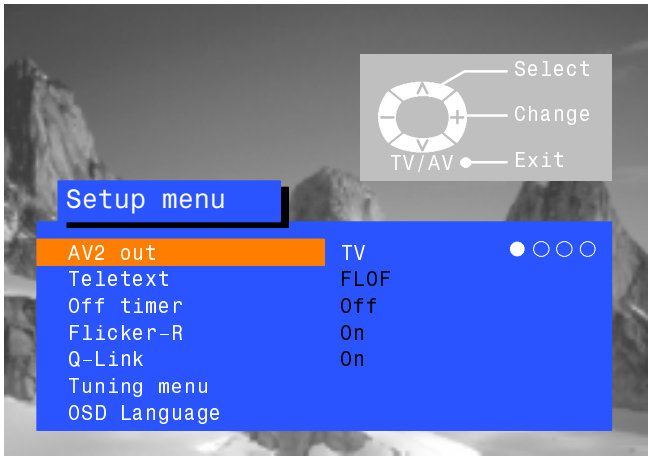
Make required changes (see sections below)

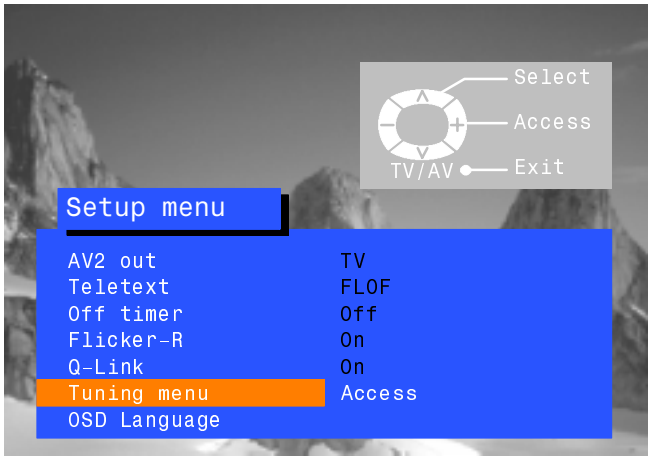
Press STR button to store changes

STR

If you have finished in the Programme edit menu, press the TV/AV button to exit

TV/AV





To delete an unwanted programme position

Ensure that the cursor is in the Prog. Column

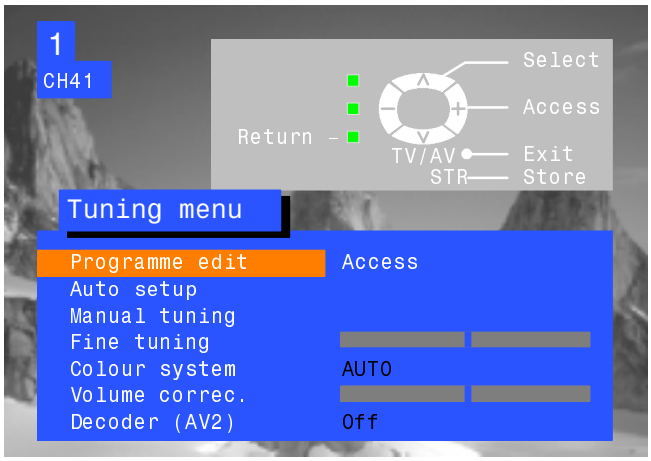
Choose the programme position

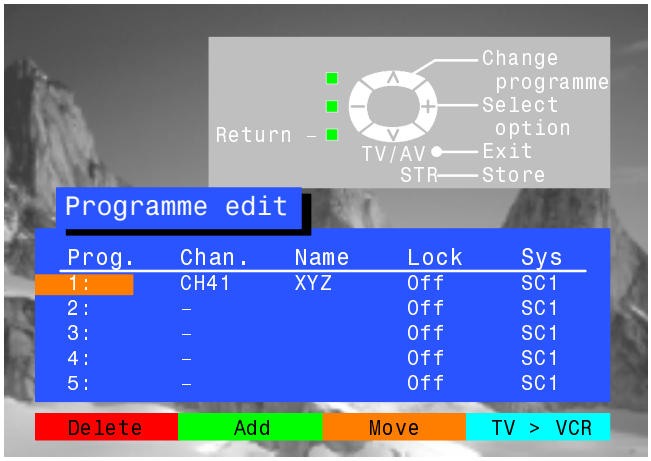
Press the Red button on remote control

Press the Red button again to confirm

If you have finished in the Programme edit menu, press the TV/AV button to exit

TV/AV





To add a programme position

Choose the programme position where the new programme is to be inserted

Press the Green button

Press the Green button again to confirm

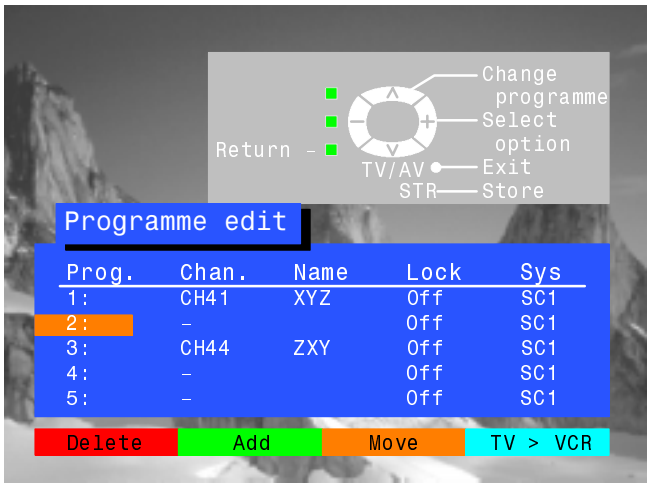
This blank programme can then be tuned, named or locked.

Press STR to store

STR

If you have finished in the Programme edit menu, press the TV/AV button to exit

TV/AV



To move a programme to another position

Choose the programme position to be moved

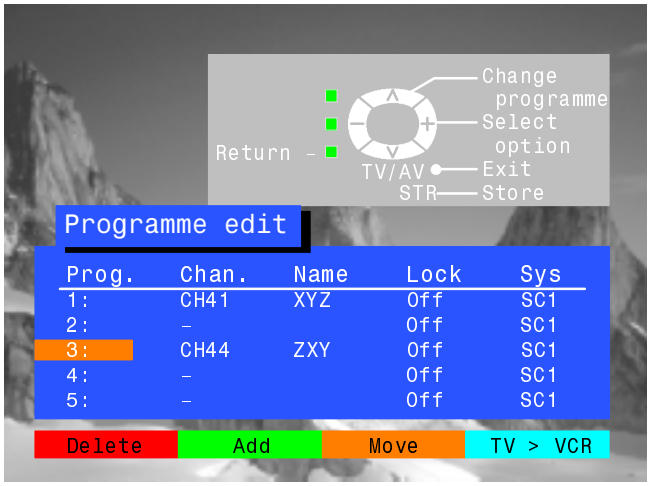
Press the Yellow button on remote control

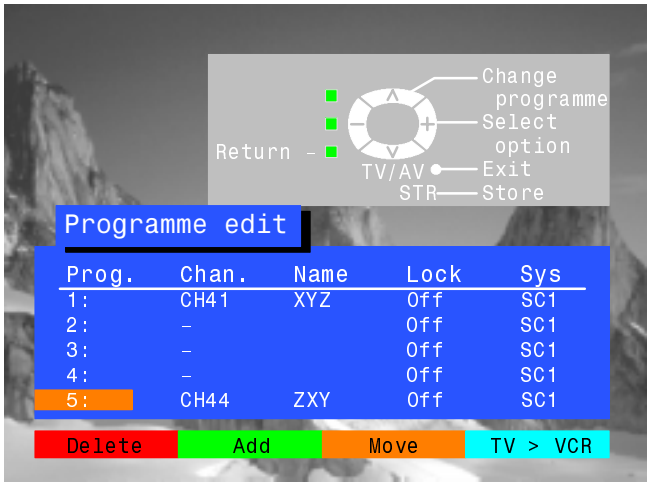
Choose new position

Press the Yellow button again to confirm

If you have finished in the Programme edit menu, press the TV/AV button to exit

TV/AV





To tune a programme position

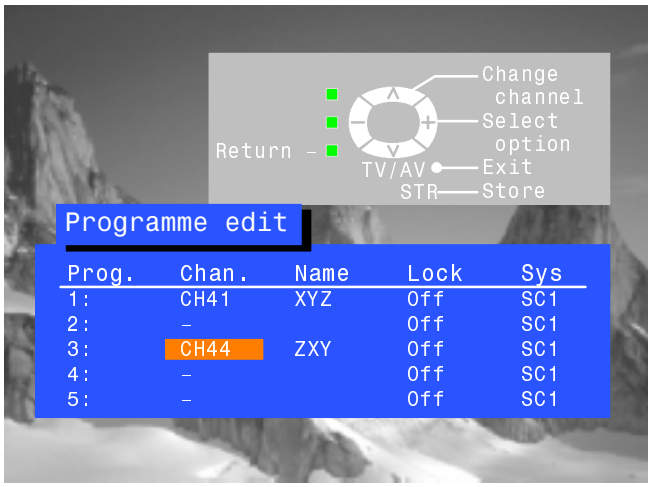
Choose the programme position

Move to the channel column

Increase or decrease channel number or use the 'C' key for Direct Channel Access (see page 5)

Press STR to store

If you have finished in the Programme edit menu, press the TV/AV button to exit



To rename a programme position

Choose the programme position

Move to the Name column

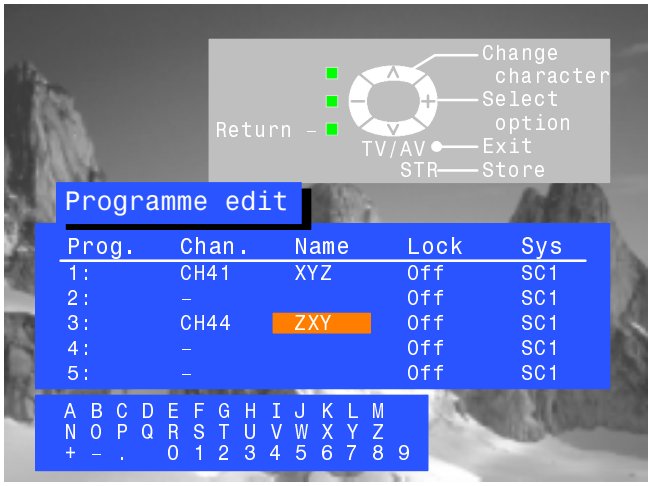
Choose the new character

Move to the next character position

Continue until renaming is done

Press STR to store

If you have finished in the Programme edit menu, press the TV/AV button to exit


Change character
Select option
Return –
TV/AV
Exit
STR
Store
Programme edit
Prog. Chan. Name Lock Sys
1: CH41 XYZ Off SC1
2: – Off SC1
3: CH44 ZXY Off SC1
4: – Off SC1
5: – Off SC1
A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
+ – . 0 1 2 3 4 5 6 7 8 9

To lock a programme position to prevent access

Choose the programme position

Move to the lock column

Choose between lock On or lock Off

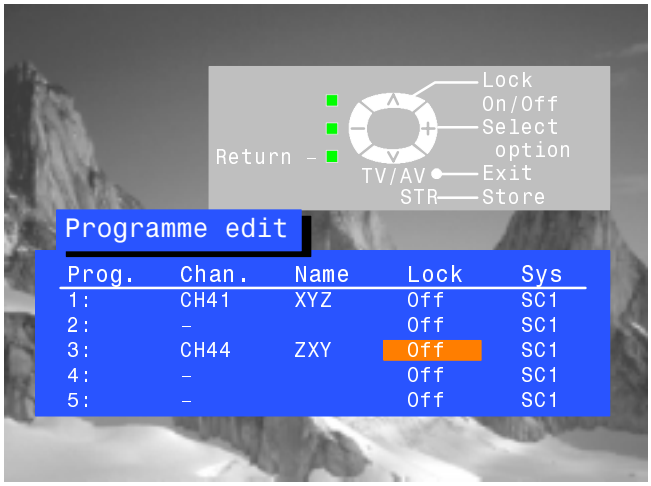
Press STR to store

STR

If you have finished in the Programme edit menu, press the TV/AV button to exit

TV/AV

Note :
When a programme position is locked, Direct Channel Access using the 'C' and numeric keys on the remote control is not available.



To change the TV–system for a programme position

Choose the programme position

Move to the Sys column

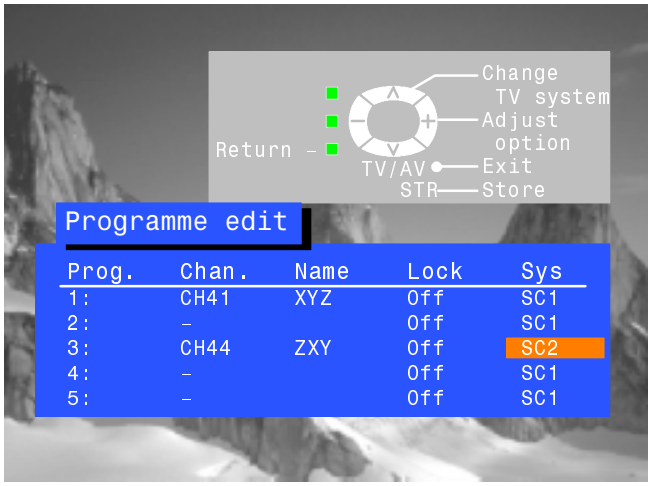
Choose the required sound system:
SC1 : PAL B, G, H / SECAM B, G
SC2 : PAL I
SC3 : PAL D, K / SECAM D, K
F : SECAM L/L'

Press STR to store

STR

If you have finished in the Programme edit menu, press the TV/AV button to exit

TV/AV



To copy programme information to a compatible VCR connected to AV2

Move to the Prog. column

Press the Blue button on the remote control.
Programme data will now be sent to the VCR. This might take a few seconds, depending on the number of stations stored.

If you have finished in the Programme edit menu, press the TV/AV button to exit

TV/AV

TUNING MENU – AUTO SETUP

The Auto setup menu will allow you to automatically retune the TV to your local stations. It is useful if you move to a different region

Open the Setup menu — SET UP

Move to Tuning menu

Access Tuning menu

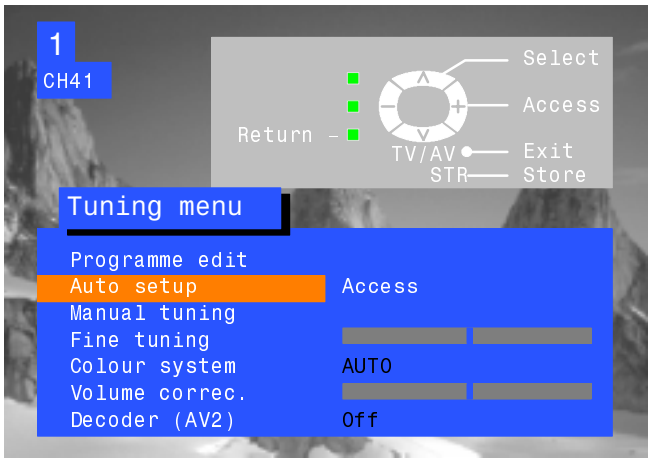
Move to Auto setup

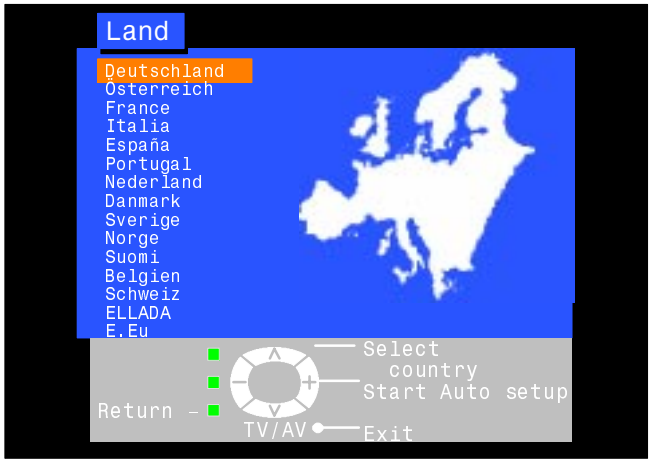
Access Auto setup

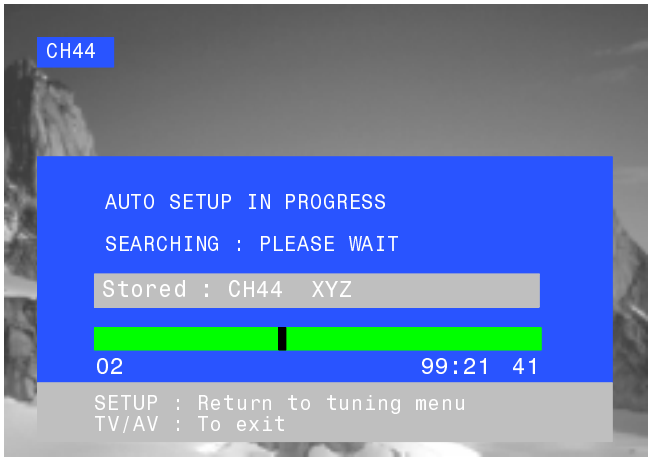
Press to confirm start

Select your country

Press to start Auto setup (ATP)







The TV will search for, locate and sort into order your local stations. If a compatible VCR is connected via the AV2 socket, programme data will be sent to the VCR via Q-Link (see page 21).

Once this operation is completed the TV will display programme position 1.

TUNING MENU – MANUAL TUNING

Manual tuning of the programme positions is available either from the On Screen Display menu or from the front panel controls

Manual tuning menu

Open the Setup menu

SET UP

Move to Tuning menu

Access Tuning menu

Move to Manual tuning

Access Manual tuning

Select the programme position to be tuned

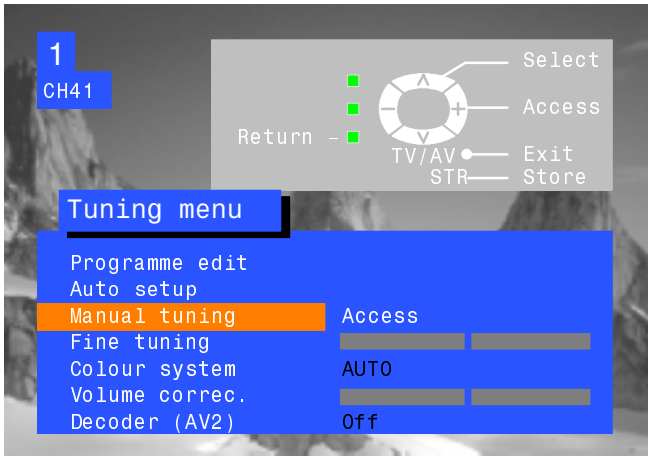
Press repeatedly until required station is found

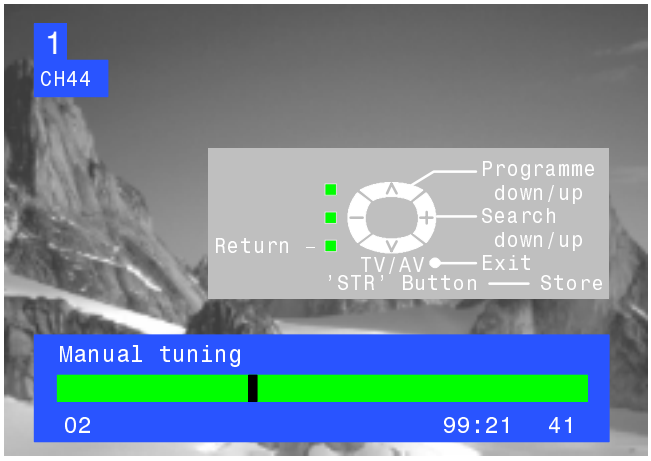
When the desired station is found, press STR to store.
The programme position will flash

STR

Press the TV/AV button to exit.

TV/AV





Manual tuning (Front panel)

Press the F button (Front panel) until "Tuning mode" is reached

F

Press the – or + button to access Tuning mode

–/v +/∧

Press the TV/AV button to move between "Change programme", "Search" and "TV–System"

TV/AV

Press the – or + button to change programme position or start search

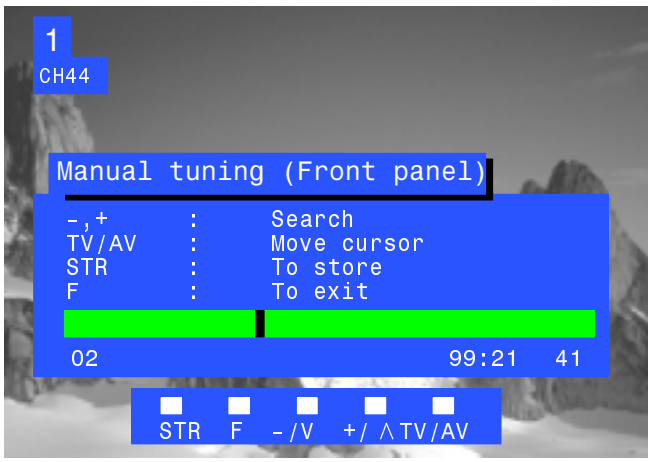
–/v +/∧

When the desired station is found, press STR to store.
The programme position will flash

STR

Repeat above procedure to tune additional programmes or press the F button to exit

F



OSD LANGUAGE

When you first installed the TV the On Screen Display language was set according to your choice of country. If you wish to use a different language then it can be chosen from the OSD language menu

Open the Setup menu

SET UP

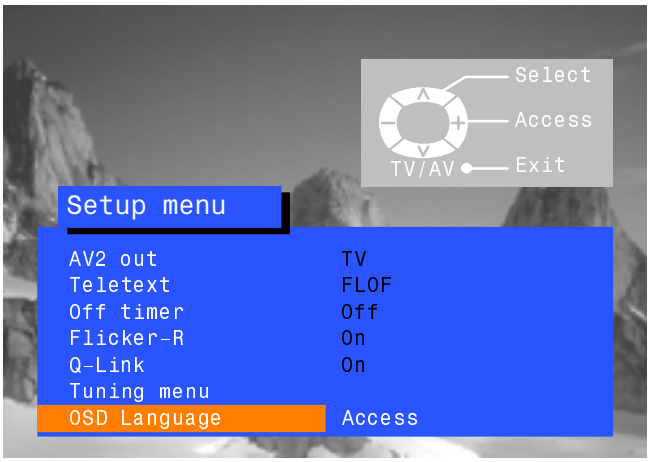
Move to the OSD language menu

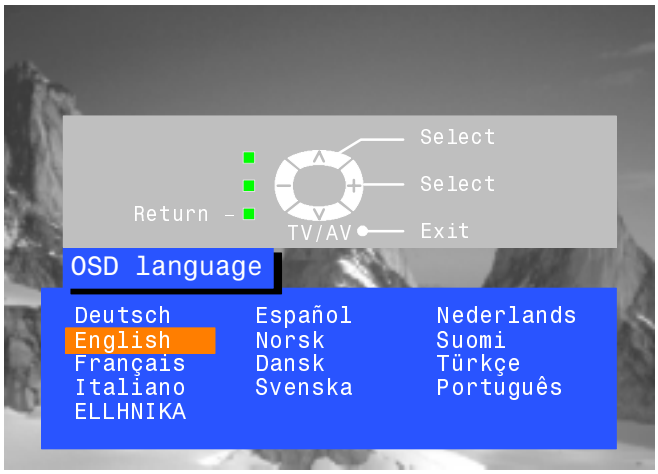
Access the OSD language menu

Move to your choice

Press the TV/AV button to select and exit

TV/AV





AV SELECT AND SETUP

The AV Select menu will allow you to choose which AV source to view

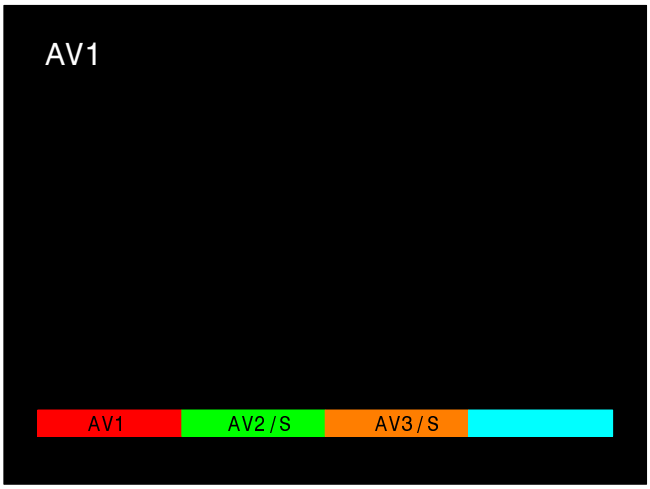
Press the TV/AV button

TV/AV

Press the appropriate coloured remote control button(whilst the options remain on screen)

The options will disappear

You may wish to make adjustments in the Setup or Sound menus



Setup menu

Open the Setup menu

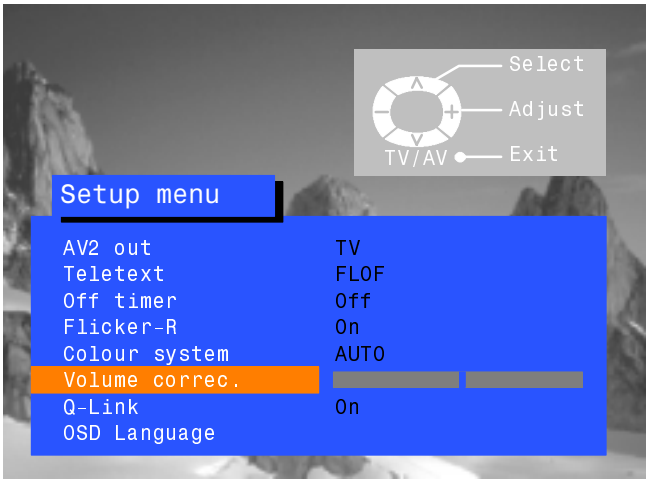
SET UP

Move to your choice

Access adjustments or options

Press the TV/AV button to exit

TV/AV



Sound menu

Open the Sound menu

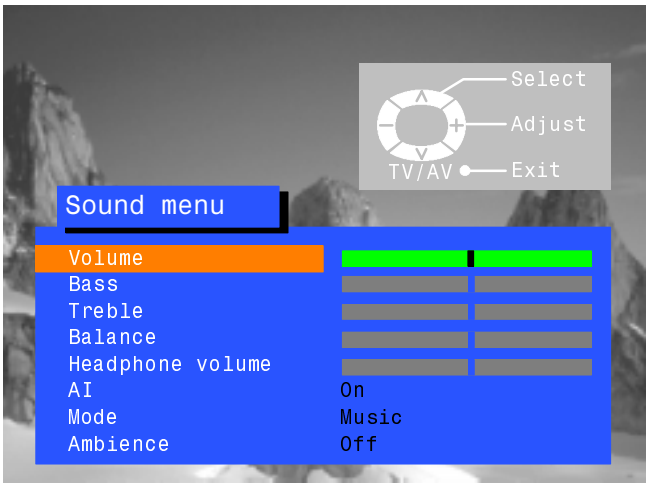
SOUND

Move to your choice

Access adjustments or options

Press the TV/AV button to exit

TV/AV



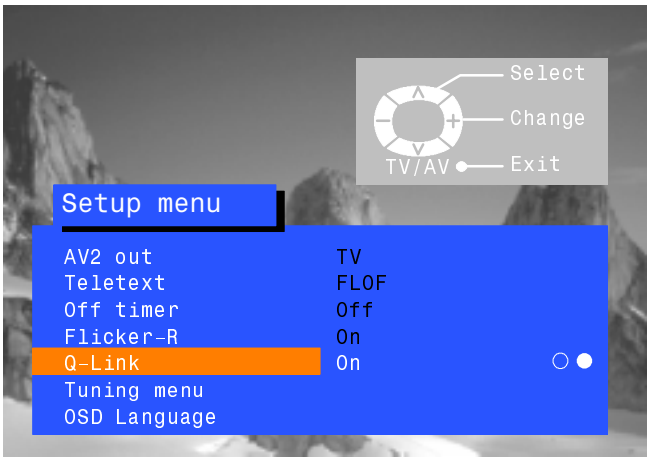
Q–Link allows the television to communicate with your VCR

Open the Setup menu — SET UP

Move to Q–Link

Confirm Q–Link is set to "On"

Press the TV/AV button to exit — TV/AV



The VCR must be connected with a SCART lead (full function type) attached between the AV2 socket of the television and the appropriate socket on your VCR. See the VCR handbook for further information. Q–Link, NEXTVIEWLINK or similar technology allows the television to instruct a **compatible VCR** to record the programme that is currently being displayed on screen, regardless of the programme position set on the VCR, thus simplifying the process of recording programmes.

To record the programme you are currently watching

Press the DIRECT TV REC button on the remote control — DIRECT TV REC

If the VCR is off, it will automatically switch on when you press the DIRECT TV REC button.
A message, sent from the VCR, will appear on screen showing what is being recorded, or if it is not possible to record:

VCR recording preset prog

VCR recording own tuner

VCR is recording the programme signal from its own tuner. If you wish you can switch off the TV and leave the VCR recording in the normal way.

VCR recording TV source

VCR is recording the programme signal from the television. You must not change programme position or switch off the TV: if you do, the VCR will automatically stop recording and switch off.

No recording TAPE IS PROTECTED

The write protection tab on the back of the cassette has been removed.

Examples of other messages that might be displayed are:

No recording NO TAPE

No recording VCR IS PLAYING

VCR Recording VCR external

No recording VCR ALREADY RECORDING

No recording TAPE MAY BE DAMAGED

No recording NO SOURCE AVAILABLE

To share tuning information

To ensure correct recordings are made, the television and VCR should share tuning information – see page 16.

- Whenever the Auto setup (ATP) function is used, tuning data will be downloaded to the VCR.

Auto Power functions

With Panasonic Q–Link VCRs these additional features are available:

- If you insert a tape in your VCR and press the Play button, the television will automatically switch on and select the AV2 input so you can view the tape.
- If you switch off the television whilst the VCR is in Stop, Fast Forward or Rewind modes, the VCR will switch off automatically.

To turn off Q–Link communication

If you do not wish to use the Q–Link feature, go to the Setup menu and set the Q–Link option to "Off". See page 11.

Important Note:
Not all VCRs support this type of data communication system. Some may support certain features, but not others. See the VCR handbook for further information.
If Q–Link is inoperative, first confirm that your SCART lead is a full function type . Ask your dealer for further details.

VCR / DVD OPERATION

The Remote Control is capable of operating some functions of selected Panasonic VCRs and DVD (Digital Versatile Disc) equipment. Some VCR and DVD equipment have different functions, so to ensure compatibility please refer to the equipment's instruction book or consult your dealer for details.

DVD
VCR

Standby

Press to switch the VCR or DVD to standby mode. Press again to switch back on.

VCR / DVD switch

Use this switch to select whether controls operate DVD equipment or your VCR.

Play

Press to playback the tape or DVD.

Stop

Press to stop the tape or DVD.

Skip / Fast Forward / Cue

VCR: Press to fast forward the tape. In Play mode, press to view the picture rapidly forward (Cue).
DVD: Press once to skip to the next track. In play mode press and hold to view the picture rapidly forward.

Skip / Rewind / Review

VCR: Press to rewind the tape. In Play mode, press to view the picture rapidly in reverse (Review).
DVD: Press once to skip to the previous track. In play mode press and hold to view the picture rapidly in reverse.

Pause / Still

Press in playback mode, the picture will pause. Press again to restart play.

Programme Up / Down

Press to increase or decrease the VCR programme position by one.

REC

Record

Press this button to start recording.

TELETEXT OPERATION

- Teletext features may vary depending on the Broadcasting Companies and is only available if the channel selected is transmitting Teletext.
- Pressing the Picture button whilst in Teletext operation will display the brightness function with a white bar, press ◀ ▶ to alter the setting as required.
  Pressing the Setup button whilst in Teletext operation will display special function options at the bottom of the screen.
- When in Teletext mode, the volume may still be altered to the desired listening level.

What is LIST mode ?

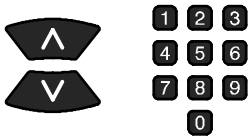
In LIST mode, four differently coloured page numbers are situated at the bottom of the screen. Each of these numbers can be altered and stored in the TV's memory.

What is FLOF?

In FLOF mode, four differently coloured subjects are situated at the bottom of the display. To access more information about one of these subjects, press the appropriately coloured button. This facility enables fast access to information on the subjects shown.

TV / Teletext mode

Press the **TV/TEXT** button.
The screen will display the Teletext page.
Press again when you wish to return to TV. mode.



Page Selection

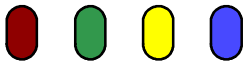
Pages can be selected in two ways :
a. Press the Up / Down buttons to increase or decrease the page number by one.
b. By entering the page number, using 0 – 9 on the remote control.

Full / Top / Bottom

Press the **SET UP** button to display special functions, followed by the **Green** button.
Press the **Green** button again to expand the BOTTOM half.
Press again to return to normal (FULL) size.

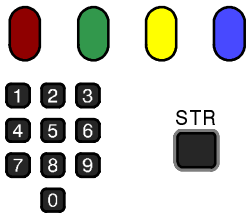
Reveal

Press the **SET UP** button to display special functions, followed by the **Red** button to reveal hidden words e.g. quiz page answers. Press again to hide.



Red / Green / Yellow / Blue buttons

In FLOF mode these correspond to the differently coloured subjects.
In LIST mode they correspond to the differently coloured page numbers.



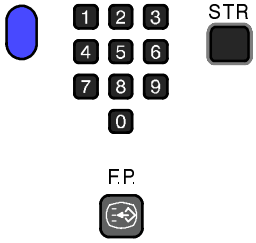
List Store

In LIST mode the four page numbers can be altered (programme positions 1 – 25 only).
To do this, press one of the four coloured buttons and enter the new page number.
Press and hold **STR**, the page numbers will change to white indicating that the page is stored.

Hold

To hold the Teletext page when viewing multi–page information.
Press again to return to automatic page update.

It is not possible to change the programme position when in News flash, Update or Sub Coded Page Access operation.



Favourite Page (F.P.)

Stores a favourite page in memory for instant recall. To store such a page, the TV must be in LIST mode, and the programme position must be from 1 – 25.
Press the **Blue** button, select the page number, then press and hold the **STR** button.
The page number is now stored.

Press **F.P.** to recall this page.

Update Display

Press the **SET UP** button to display special functions, followed by the **Yellow** button to view the TV picture whilst searching for a Teletext page.
When found, the screen will display the page number at the top left.
Press the **Yellow** button to view the page.
Press **TV** / **TEXT** again to return to normal TV operation.

News Flash
When a news flash page has been selected, press **SET UP**, **Yellow**, to view the TV picture. When an update is received, the page number will be displayed on screen.
Press the **Yellow** button to display the News Flash
Press **TV** / **TEXT** to return to normal TV. operation.

Update
Press **SET UP**, **Yellow** to see the update of information on certain pages.
When an update is received, the page number will be displayed at the top left of the screen.
Press the **Yellow** button to view the page.
Press **TV** / **TEXT** to return to normal TV. operation.

Sub Coded Page Access

When Teletext information exceeds more than one page, it may take some time for the automatic changing of the sub pages to reach the sub page you require.
It is possible to enter your required sub page and continue watching the normal programme until the correct sub page is found.
Select the required page number using buttons 0 – 9.

Press the **SET UP** button followed by the **Blue** button; T**** will be displayed at the top right of the screen.

Enter desired sub page number before the T**** disappears.
To select page 6 enter 0, 0, 0 and 6.

(If in LIST mode, a 'T' will appear in the current box at the bottom).

Press the **Yellow** button to view a normal TV programme.
(Press **SET UP**, **Yellow** in LIST mode).

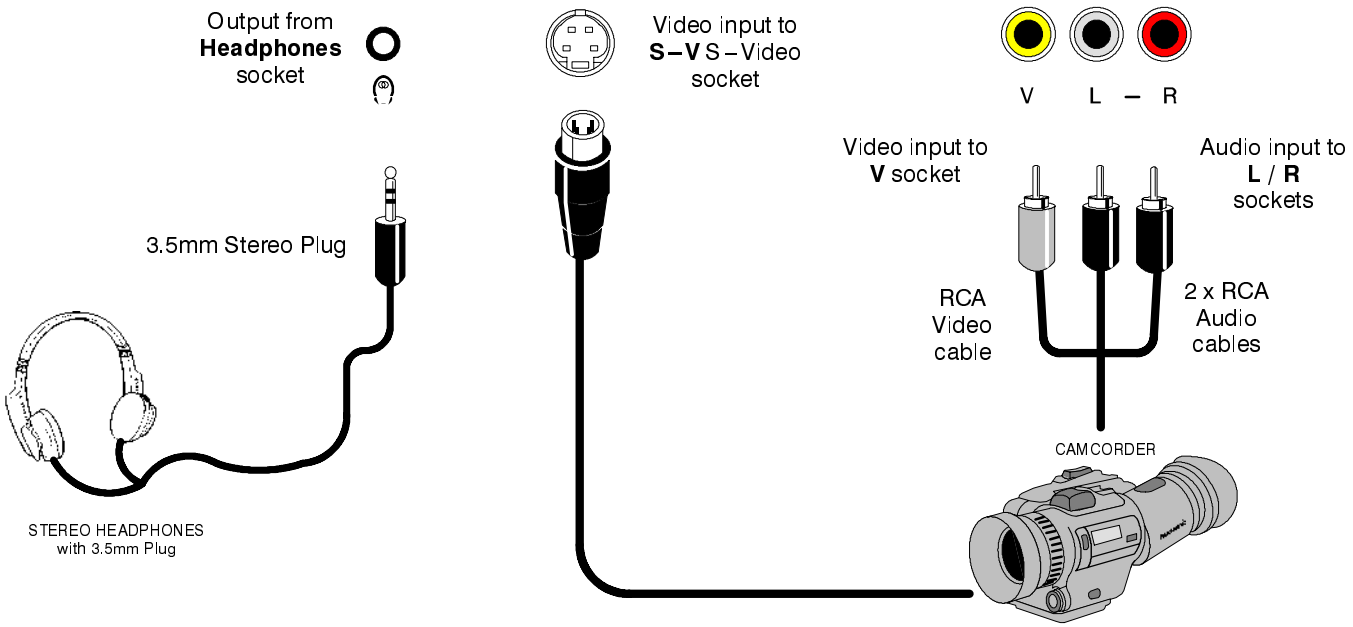
When the page is available, press the **Yellow** button to view the page.
To clear the page perform one of the following :

- Press **SET UP**.
- Select a new page number.
- Press **TV/TEXT** to return to normal TV operation.

Index

When in FLOF operation
Press **INDEX** to return to the main index page.
Depending on the way information is transmitted, this may have to be pressed more than once to return to the main index page.

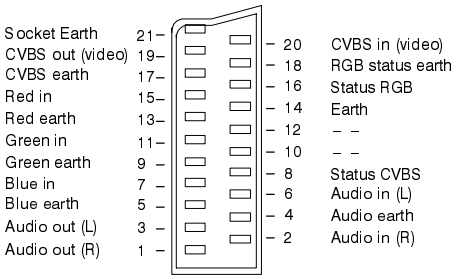
Front AV3 4 pin S–Video, RCA Audio / Video and Headphone Sockets



Note :
Additional equipment and cables shown are not supplied with this TV set.

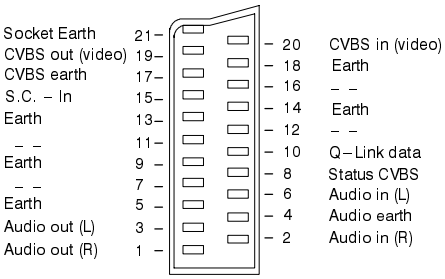
■ Scart and S–video socket information

AV1 Scart sockets



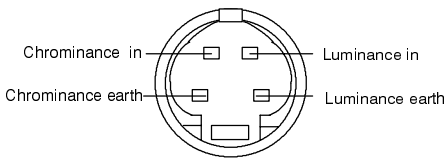
Suitable inputs for **AV1** include RGB (Red/Green/Blue).

AV2 Scart socket (S–Video, Q–Link)

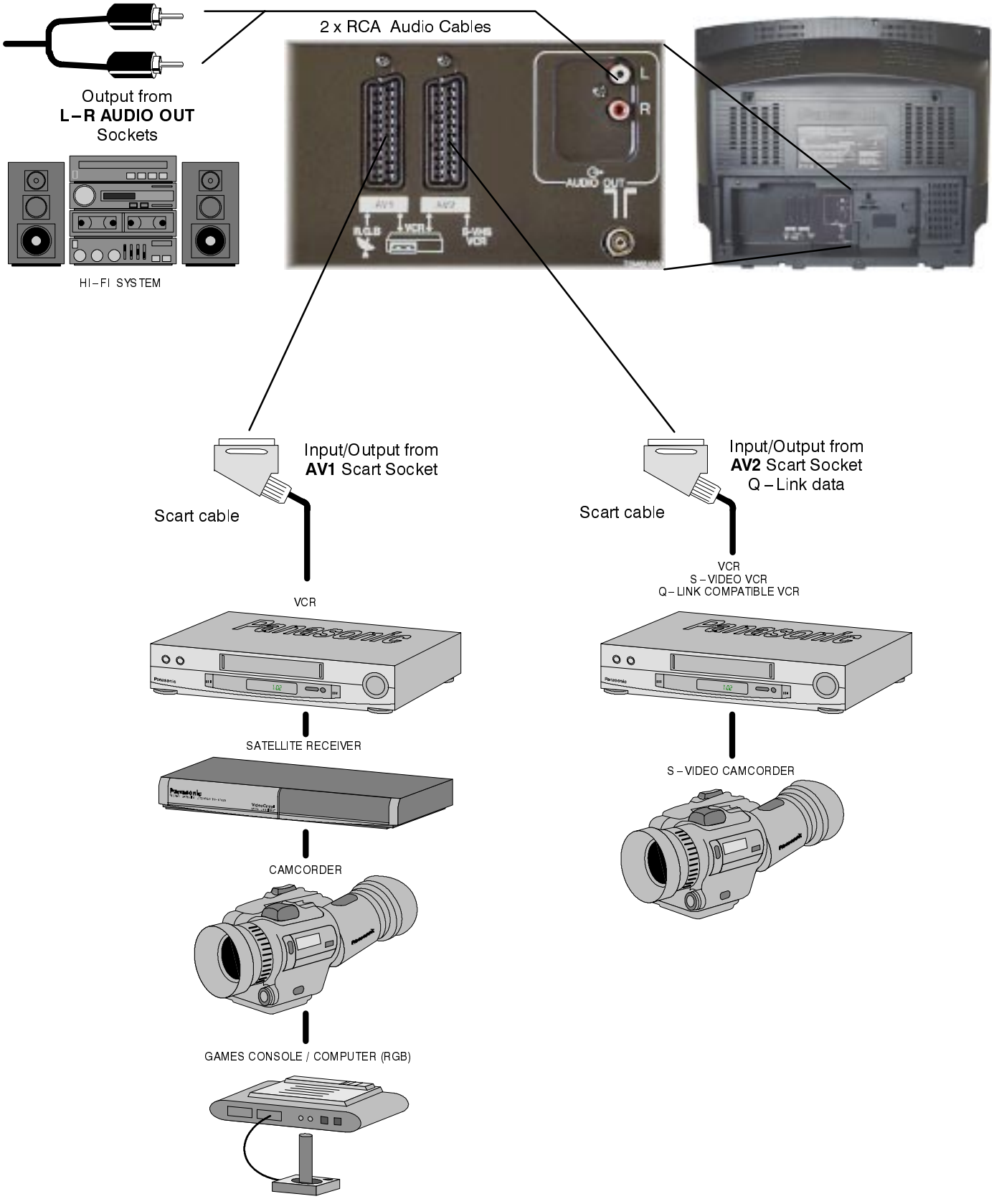


AV2 – Pins 15 and 20 are dependent on AV2 S–VHS / VIDEO switching.

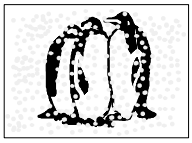
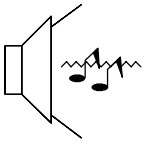
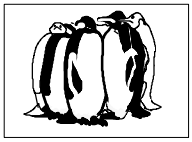
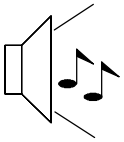
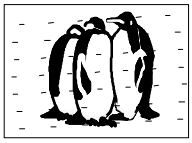
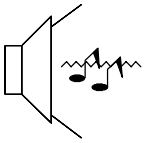
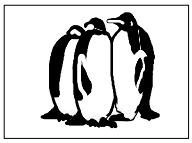
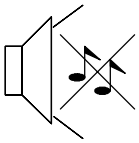
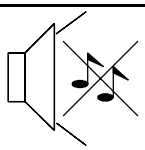
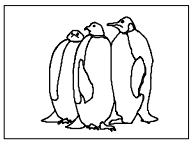
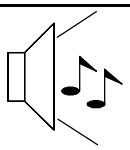
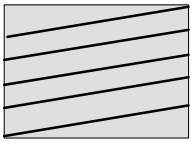
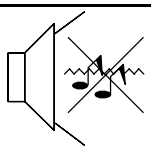
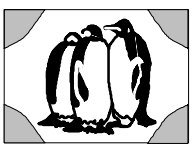
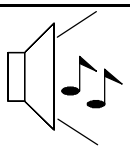
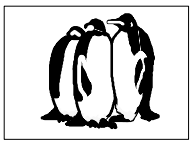
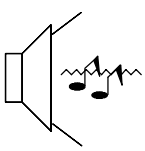
S–Video 4 pin socket



Rear AV1/AV2(S) 21 Pin Scart and RCA Audio Out Terminals



Notes:
Additional equipment and cables shown are not supplied with this TV set.
Do not connect a computer with TTL output (5V) to this set.
The AV2 21 pin terminal can also be used as an output to Audio/Video equipment; see page 11 for details.

Symptoms		Checks
Picture	**Sound**	
 Snowy Picture	 Noisy Sound	Aerial location, direction or connection
 Multiple Images	 Normal Sound	Aerial location, direction or connection
 Interference	 Noisy Sound	Electrical appliances Cars / Motorcycles Fluorescent lights
 Normal Picture	 No Sound	Volume level Sound mute switched on
No Picture	 No Sound	TV set to AV mode Not plugged into A.C. outlet Not switched on Picture / Sound controls set at minimum levels Check if in standby mode
 No Colour	 Normal Sound	Colour controls set at minimum levels
 Poor or Distorted Picture	 Weak or No Sound	Retune Channel(s)
 Coloured Patches	 Normal Sound	Magnetic Interference from unshielded equipment Receiver moved while switched ON, switch TV off for 30 minutes.
 Normal Picture	 Weak or distorted sound	Sound reception may have deteriorated. Switch MPX setting (Sound menu) to Off until reception improves.

FOR YOUR GUIDANCE

■ Service

Before requesting service, please refer to the trouble–shooting guide on previous page to determine the symptoms. To obtain service please contact your local Panasonic dealer quoting the model number and serial number (both are located at the rear of the TV).

■ TV Games / Home Computers

Extended use of TV games or home computers with any television set can cause a permanent 'shadow' on the screen. This type of irreversible picture tube damage, can be limited by observing the following points:

- Reduce the brightness and contrast levels to a minimum viewing level.
- Do not operate the television set for a continuous period of time while using TV games or home computers.
- This type of picture tube damage, is not an operating defect, and as such is not covered by the Panasonic warranty.

■ Sleep Feature

If the set is not switched off when the TV station stops transmitting , it will automatically go to standby mode after 30 minutes. This function will not operate when the TV is in AV mode.

■ Last Position Memory

Certain functions have a last position memory, i.e. the setting at the time of switch–off will be the setting used when the receiver is switched on again: –

Programme	Tint
Headphone volume	(M.NTSC / NTSC only)
AV Position	Contrast
Volume	Sharpness
MPX	Aspect
Bass	Standby
Treble	Artificial Intelligence (AI) (Picture & Sound)
Balance	Flicker–R
Colour Balance	Colour
Status	Brightness
Teletext mode	P–NR
Decoder (AV2)	Q–Link

Volume correction (in AV mode only)
Ambience

SPECIFICATIONS

		TX–28LD90F	TX–25LD90F
Power Source		220 – 240V 50Hz A.C.	
Power Consumption		140W	130W
Standby Consumption		1,9W	
Picture Tube Visible Diagonal		66 cm	59 cm
Audio Output Music Power		Front Left / Right 20W	
Dimensions	H W D	596,5 mm 778,0 mm 481,0 mm	550,5 mm 730,0 mm 478,5 mm
Weight (Kg)		33	28
Receiving Systems/ Band name		**PAL B, G, H, I, SECAM B,G SECAM L/L'** VHF E2 - E12 VHF H1 - H2 (ITALY) VHF A - H (ITALY) UHF E21 - E69 CATV (S01 - S05) CATV S1 - S10 (M1 - M10) CATV S11 - S20 (U1 - U10) CATV S21 - S41 (Hyperband) **PAL D,K, SECAM D, K** VHF R1 - R2 VHF R3 - R5 VHF R6 - R12 UHF E21 - E69 **PAL 525/60** Playback of NTSC tape from some PAL video recorders (VCR) **M.NTSC** Playback from NTSC 4.43 MHz Videorecorders (VCR) **NTSC (AV input only)** Playback from NTSC Videorecorders (VCR)	
Aerial – Rear		UHF / VHF	
Headphones – Front		3,5mm, 8Ω impedance	
AV – Rear		**AV1** – 21 pin terminal – Audio / Video in / out, RGB in. **AV2** – 21 pin terminal – Audio / Video in/out, S–Video in, Q–Link 2 x RCA Audio Monitor Out.	
AV – Front		**AV3 –** S–Video in, 1 x RCA Video in, 2 x RCA Audio in	

Specifications are subject to change without notice. Weight and dimensions shown are approximate.

98X